

## ABSTRACTS OF DISSERTATIONS AND THESES

### Ph.D. Dissertations

✓ Errol B. Perez, *Systematic Risk and Levels of Unsystematic Risk in the Philippine Capital Market: A Modified Capital Asset Pricing Model?*, College of Business Administration, University of the Philippines, 1979.

The purpose of the dissertation was to test the applicability of the Capital Asset Pricing Model (CAPM) in the Philippine capital market context. The mean-variance characteristics of listed securities were derived and related to the overall capital market environment.

The input data were in the form of "value relatives", which consisted of the price of a stock at the end of a period plus any dividends or other payments made during the period, divided by the price of the stock at the beginning of the period. The measure of risk used was the standard deviation of the natural logarithms of the monthly value relatives for a series of months covering a period of 10.5 years, from 1965 to mid-1975. These value relatives and risk factors were derived from all stocks listed in the Manila Stock Exchange over the same period.

These stocks, coupled with their risk-return factors, were then randomly split into test portfolios, encompassing a size range of 2 to 50-security portfolios. The same risk-return factors were then derived for these random portfolios and related to specific portfolio sizes. A risk-size continuum was then derived and compared with a hypothesized relationship of declining risk vis-à-vis increasing size.

Next, the risk and return elements for the total universe of listed stocks were derived on a year-to-year basis, in order to determine the intertemporal behavior of systematic risk and systematic return.

The findings showed that, during the 10.5 years under study, the relationship between risk and portfolio size seemed to be inverse to the hypothesized relationship; i.e., as the number of securities in a randomly drawn portfolio increased, the risk-level also increased.

It was also found that systematic risk and systematic return over the relevant period were non-stationary. For systematic risk, a negatively sloped line was fitted to the data, which showed that there had been a steep decline in undiversifiable risk. At the same time, the basic return from the overall market had exhibited a slight upward slope in its regression line, which showed that systematic return could be expected to continue a stable secular trend.

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✓ Harsono Ronohadiwidjojo, *Scanning for Strategic Information in a Developing Economy — The Case of the Chemical Industry in Indonesia*, College of Business Administration, University of the Philippines, 1979.

Scanning for strategic information is crucial to strategic decision-making. Nonetheless, the literature in business administration on the subject is limited. Acceleration of economic development has caused many developing economies, such as Indonesia, to experience rapid changes in their environments, requiring business firms to scan their environment more carefully. The pressing need for Indonesian firms to scan for information and the meager knowledge about scanning had encouraged the present study.

Three major topics were studied. Firstly, the scanning practices of managers in a developing economy, including the kinds of information acquired, the sources of information used and the ways of gaining information were investigated and compared with related findings in the developed economies. Secondly, the underlying factors which tended to govern the importance of the aforementioned scanning practices were identified and hypotheses thereon presented for further studies. Thirdly, the conditions associated with the frequency of information search were determined.

The scanning practices of sixty managers of the chemical industry in Indonesia were surveyed. These managers were selected from among firms which earned relatively high profit in the industry, and which were believed to perform scanning in their operations. General, marketing, financial and production managers constituted the respondents of this study. They were considered experts in their jobs and in their firms. Questionnaires and direct interviews were used to gather data on managers' experiences and perceptions. The data were classified and analyzed according to a scheme earlier used by Francis Aguilar and modified for this study. To indicate statistical relationship between certain phenomena, appropriate statistical tests were employed.

The major findings showed that managers in Indonesia operated in two major areas, namely, imposed government rules and market mechanism, out of which business opportunities were elicited. It was also found that firms which faced difficulties in the past and which perceived difficulties in the future tended to conduct occasional search instead of the commonly suggested constant search. Finally, it was discovered that the importance of different kinds and sources of information and ways of gaining information tended to be governed by certain factors which also explained the differences in scanning practices among firms in developing and developed economies. These factors were: (1) unpredictability, which governed differences in the importance of different kinds of information; (2) the sources' accessibility to managers; (3) the sources' concern with the managers' specific and general interests, which accounted for differences in the importance of different sources of information; (4) the extent of personal communication network, (5) the ability of managers and their sources to identify relevant information and (6) the intimacy of the relationships between managers and their sources which influenced the difference in the importance of different ways of gaining information.

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Jaime B. Quizon, *Factor Gains and Losses in Agriculture: An Application of Cost and Profit Functions*, School of Economics, University of the Philippines, 1980.



The factor income consequences (a) of biased and neutral technical changes in agriculture and (b) of public investments that exogenously shift agricultural factor input supplies and/or agricultural final output demands were analyzed within a partial equilibrium neoclassical framework.

The basic model built on earlier works by Evenson and Welch (1974), Evenson (1975) and Binswanger (1978). It relied mainly on cost (or profit) functions which under optimizing behavior on the part of firms, were dual to some underlying production technology. These cost (profit) functions, under certain regularity restrictions on them, were able to provide systems of input demand and output supply equations via Shephard's (Hotelling's) lemma. With accompanying assumptions on the structure of the input supply and output demand equations, the basic overall model was closed. From here, analytic solutions on factor income consequences were obtained for a set of cases that systematically considered more agricultural factor inputs and more agricultural regions in a one-sector (agriculture) setting. Possible extensions of the basic model in a general equilibrium (more than one sector) model were also pointed out. Finally, the basic model was econometrically estimated for Philippine agriculture. Important income distribution issues in Philippine agriculture were reviewed in the light of these estimates.

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Ellen H. Palanca, *Inheritance, Wealth, Income, Education and Occupation: Transfer of Status Across Family Generations*, School of Economics, University of the Philippines, 1981.

This study examined the effect of parental variables on a person's socioeconomic achievements measured by income, wealth, education and occupational status, and the interrelationships among the achievement measures. The data used were from two samples (for reference year 1975): one was a national sample of 2920 households and the other, a Metro Manila sample of 2295 households. The Metro Manila sample, which was the main focus of this study, consisted of parents with children studying in some exclusive schools in Metro Manila. The following variables were used to measure family background: the material wealth of parents of the household head (proxied by the product of inheritance received by the household head and the number of siblings plus one), the education of the father of the household head, the education of the mother of the household head, the occupation of the father of the household head, the number of siblings of the household head and the birth position of the household head.

The most important determinant of family income was found to be family wealth while the second most important determinant was education. This study therefore showed that education should more accurately be regarded as secondary to wealth, insofar as income determination was concerned. Among the family background measures, parental wealth was the only variable which significantly determined income and present wealth. All other variables (parental education, parental occupation, and the family size variables), did not significantly determine income and present wealth. It seemed therefore that the term "background" was much too amorphous. What was necessary was to specify the components and work with them directly.



What education and occupation of the previous generation appeared to determine was the education and occupation of the current generation. The number of siblings had a positive effect on income but a negative effect on one's share in the parental wealth. (Parental wealth was almost always divided equally.) There was a bit of an advantage to be the youngest in terms of education attained.

The findings that wealth and inheritance were highly significant in the determination of income called attention to policies related to property distribution in the consideration of redistribution of economic rewards among individuals. Such policies as efficient land reform, real property taxation, and taxation of capital gains, inheritance and gifts *inter vivos* were important tools for limiting wealth accumulation and landholdings. The importance of wealth in income studies also implied the need for accurate measurement of wealth. The findings on education being important in the determination of economic status and in the determination of future generations' education suggested the importance of public educational policy.

#### M.A. Theses

Linda Luz C. Bacungan, *The PCMP: An Illustration of How Government Policy Could Promote International Subcontracting*, School of Economics, University of the Philippines, 1979.

In this paper, an attempt was made to assess the significance and possible role of international subcontracting in the car manufacturing of the Philippines through the Progressive Car Manufacturing Program (PCMP). The PCMP was looked into in terms of (1) the changes it may have brought about in the composition of the firms that manufacture parts and components that go into the making of cars in the Philippines and (2) its effects on such aspects of the economy as the market of the car manufacturing sector, employment, skills and technology, production and exports.

After six years of implementation of the Progressive Car Manufacturing Program of the Philippines, the study noted that the industry has broadened its supportive industrial base which was mainly achieved through PCMP's attempt at horizontal integration. Furthermore, the study showed that international subcontracting could lead to the creation of jobs, promotion and upgrading of skills, near-full utilization of the subcontractors' production capacity and thus a general increase in sales. But international subcontracting had also led to the dependency of some subcontractors, especially those whose production activities cater only to job orders, on the firm giving out the orders. It had also led to accepting jobs which might prove to be either low-grade or undesirable (but were sought for because it would provide employment to hundreds of unemployed) and to accepting technology which might not be appropriate for the environment of the developing country. What happened in the latter case was that the developing countries created the environment that would fit in the given technology and not vice versa.

The ASEAN Car Complementation Program was also shown to be a concrete step toward a more organized international subcontracting relationship with other countries, in this case with ASEAN members.



In the light of these discussions, the paper recommended that an automotive clearing house be established for the purpose of determining the appropriate technology for the different production processes involved in the car manufacturing and assembly industry of the Philippines.

Corollary to this, the government should impose restrictions as to what car components could be manufactured efficiently by the domestic market; as to what components should be produced by subcontractors and principals, and, as to who should produce them. These are important especially since it was found out that the domestic resource cost in the car manufacturing industry was high. And while bearing in mind some unavoidable trade-off, the government should not allow the people to be mere takers of "dirty-works" and "left-overs" especially since the initial impetus of the progressive car manufacturing program had not been exactly promising.

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Joseph D. Fernandez, *An Empirical Analysis of the Effect of Life Expectancy on the Fertility of Married Women in the Philippines, 1973: The Threshold Hypothesis*, School of Economics, University of the Philippines, 1979.

This study examined the fertility behavior of married women in the Philippines, attempting to answer the question: Under what conditions does a reduction in mortality begin to bring about substantial fertility decline? Results generally confirmed Encarnación's model of fertility behavior that threshold values of income and education exist such that the effect of more income and education on fertility below the threshold is positive, and above it is negative. In addition, the study revealed these two findings:

i) At the pre-threshold level of income, fertility was not significantly affected by increasing life expectancy at birth. It was only above the threshold that higher life expectancy brought about a significant reduction in fertility.

ii) The wife's labor force participation did not significantly pressure couples below the threshold to limit births. Above the threshold, however, it was significantly correlated with fertility.

The study noted the implications of these findings on the demographic transition theory. For developed countries, it is likely that modernization and industrialization had simultaneously raised most families beyond the threshold. Hence, rising life expectancy in the process of Western development could have substantially induced a subsequent fall in the birth rates. For poor underdeveloped countries where the population is generally below the threshold, an increase in the life expectancy due to health and medical interventions could not have significantly affected fertility. Therefore, while mortality rates declined massively and abruptly, high fertility rates persisted over time like what happened to countries like the Philippines where most families (at least before 1968) appeared to have pre-threshold status. For developing countries recently experiencing substantial socioeconomic improvements, the increase in life expectancy due to health and medical advances had interwoven with social and economic changes. Thus, more families may have increasingly reached post-



threshold status. These factors combined would imply a stronger negative impact of higher life expectancy on fertility.

Based on the foregoing considerations, the study argued that one factor explaining the long lags between the beginning of the declines of mortality and fertility was the percentage distribution of families below and above the threshold. The lower income levels per caput in underdeveloped countries than in developed countries in their pre-industrialization phase could imply that individual families in the former could have been predominantly below the threshold, while a considerable proportion of the population in the latter may have above-threshold income levels. Thus, even with lower mortality rates (all other things constant), high fertility in the LDCs would tend to persist longer than in the Western developed countries and thus have a much longer time lag.

Why in the first place was there a substantial gap between the declines of mortality and fertility in the Western developed countries? According to the study, since socioeconomic development is a gradual process, it might have also taken quite some time for the vast majority of the population to have succeeded in acquiring post-threshold status through the long process of modernization. This may be supported by the observation that, where modernization was achieved at a relatively shorter time, fertility seemed to be also more responsive to mortality decline — thus the relatively shorter time lag. Conversely, in countries where mortality decline had been exogenously brought about by health and medical technology, fertility correspondingly continued to exhibit an inelastic response to mortality reduction. In brief, the study concluded that the gap between mortality and fertility decline depended on the initial distribution of the households below and above the threshold income and seemed to vary directly with the length of time that the majority of the population (through socioeconomic development) had gone over the threshold.

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✓ Chawewon Saibua, *An Economic Analysis of Fertility of Rural and Urban Thai Women*, School of Economics, University of the Philippines, 1979.

An economic framework was applied in this study to find out the factors determining the fertility behavior of women aged 15-49 in rural and urban areas in Thailand. Using household data obtained from the National Longitudinal Survey of Social, Economic and Demographic Change, this study explored, firstly, the relationship between fertility and a set of social and economic variables such as education and labor force participation; and secondly, the determinants of the desire for additional children among urban and rural Thai women.

The study's findings indicated that the fertility model seemed to represent the relationship between fertility and other independent variables, and appeared to be better fitted to the urban data. Women's age and women's age at first marriage were found to have a strong significant impact on fertility, both in rural and urban areas. As age of women increased, fertility increased. Findings also revealed the negative effect of raising age at marriage, implying that postponing age at marriage would result in the decline of fertility.



By contrast, husband's occupation and land ownership had no strong impact on fertility in all cases. Three variables which turned out less significant in explaining the variations in fertility were: husband's education, wife's education and material possession. However, the education of husband and wife were found to be significant and negatively correlated with fertility in the urban areas. Thus, the higher the level of education of parents in urban areas, the lower was their demand for children.

In the desire for additional children model, most of the results were as expected in terms of the direction of the impact, but the absolute values obtained were small and insignificant. This indicated that variables such as husband's occupation, material possession, land ownership and wife's labor force participation did not significantly affect the desire for more children. It was noted that the absence of a relationship between the wife's labor force participation and the desire for more children may have been because most Thai women worked in agricultural activities and unpaid jobs.

Cumulative fertility and women's age had a significant impact on desire for additional children. The analysis showed that the desire for additional children decreased as women's age increased or as the actual number of children increased. The indicator, preference for a son, had a strong unexpected negative impact on desire for additional children, implying that the rural and urban families in Thailand probably have no distinct preference for a son.

The study proposed that its findings be further investigated, considering that fertility is a complex phenomenon associated with a multitude of economic, social and demographic factors, and that there has yet been no consensus on the appropriate specifications of the demand model of fertility made by different investigators. Continuing research on the population of Thailand in both demographic and economic fields and other related areas was mentioned as necessary to evaluate past performance and provide new insights into the changing economic and demographic parameters of the country. Specifically, the study pointed out the need to improve population censuses, survey of population changes and registration of births, deaths and migrations, to provide more complete data for studies on fertility.

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✓ Padma Nath Tiwari, *Determinants of Hectare Accumulation of Homestead Grant in Palawan Province, 1975*, School of Economics, University of the Philippines, 1979.

This study investigated the demographic and institutional factors attributable for hectare accumulation of public agricultural land in Palawan for 1975. It mainly determined the quantitative relationship between hectare accumulation of public land, on the one hand, and demographic variables such as age, sex, household size, location and period of cultivation prior to the granting of land, on the other.

This study was based on some of the sample data of a study on distribution of Public Agricultural Land. Data on the distribution of agricultural land represented the population of such grant in Palawan for 1975. Demographic descriptions of the patent-holders and the duration of tillage of the sample size of 85 households covering fifty per cent of the popula-

tion were tabulated from records in the Bureau of Lands. The formulated hypotheses were tested using regression analysis.

These were the major findings:

1. The age factor influenced the settlers' demand for homestead grant; those in the upper age bracket tended to demand more land.

2. The sex factor was an important determinant of hectareage accumulation; females demanded relatively more land. This finding though was subject to the institutional setup and the sample size which was male-dominated because more males were likely to engage in the more difficult tasks demanded in the settlement.

3. The household size variable was also found to determine hectareage demand. Larger demand of land was mainly influenced by the larger pool of labor force rather than the needs of the settler's households.

4. The effect of period of cultivation was not statistically significant in either direction, owing to the subsistence or below subsistence level of income in rural areas.

5. Location proved to be the most consistent and significant explanatory variable for hectareage variation; the more remote the area, the higher was the settler's hectareage demand.

The limitations of the study did not allow the recommendation of an optimal farm size. From the demand point of view of settlers, however, certain conclusions could be made on the maximum though not necessarily optimal hectareage to be distributed. Based on the households sampled wherein 94.1 per cent had acquired only 14 and less hectares of public agricultural land, the study recommended that the ceiling of 24 hectares for homestead grant be reduced to about 15 hectares, unless the settlers are provided with the capital and other input costs needed.